

SEQUENCE LISTING

10/590691

<110> Lepistö, Matti
Pawlowski, Kryzysztof

<120> Methods for Identifying Compounds Capable of Modulating the
Hydrolase Activity of CLCA Protein

<130> 06275-519US1

<150> PCT/SE2005/000316
2005-03-03

<150> SE 0400564-1

<151> 2004-03-05

<160> 44

<170> PatentIn version 3.1

<210> 1

<211> 302

<212> PRT

<213> Bos taurus

<400> 1

```

Ile Leu Phe Leu Thr Leu His Leu Leu Pro Gly Met Lys Ser Ser Met
1      5      10      15
Val Asn Leu Ile Asn Asn Gly Tyr Asp Gly Ile Val Ile Ala Ile Asn
      20      25      30
Pro Ser Val Pro Glu Asp Glu Lys Leu Ile Glu Asn Ile Lys Glu Met
      35      40      45
Val Thr Glu Ala Ser Thr Tyr Leu Phe His Ala Thr Lys Arg Arg Val
      50      55      60
Tyr Phe Arg Asn Val Ser Ile Leu Ile Pro Met Thr Trp Lys Ser Lys
65      70      75      80
Ser Glu Tyr Phe Ile Pro Lys Gln Glu Ser Tyr Asp Gln Ala Asp Val
      85      90      95
Ile Val Ala Asn Pro Tyr Leu Lys Tyr Gly Asp Asp Pro Tyr Thr Leu
      100     105     110
Gln Tyr Gly Arg Cys Gly Glu Lys Gly Lys Tyr Ile His Phe Thr Pro
      115     120     125
Asn Phe Leu Leu Thr Asn Asn Phe His Ile Tyr Gly Ser Arg Gly Arg
      130     135     140
Val Phe Val His Glu Trp Ala His Leu Arg Trp Gly Ile Phe Asp Glu
145     150     155     160
Tyr Asn Val Asp Gln Pro Phe Tyr Ile Ser Arg Lys Asn Thr Ile Glu
      165     170     175
Ala Thr Arg Cys Ser Thr His Ile Thr Gly Ile Asn Val Val Phe Lys
      180     185     190
Lys Cys Pro Gly Gly Ser Cys Ile Thr Ser Leu Cys Arg Arg Asp Ser
      195     200     205
Gln Thr Gly Leu Tyr Glu Ala Lys Cys Thr Phe Leu Pro Lys Lys Ser
      210     215     220
Gln Thr Ala Lys Glu Ser Ile Met Phe Met Pro Ser Leu His Ser Val
225     230     235     240

```

```

Thr Glu Phe Cys Thr Glu Lys Thr His Asn Thr Glu Ala Pro Asn Leu
      245                250                255
Gln Asn Lys Met Cys Asn Gly Lys Ser Thr Trp Asp Val Ile Met Asn
      260                265                270
Ser Val Asp Phe Gln Asn Thr Ser Pro Met Thr Glu Met Asn Pro Pro
      275                280                285
Thr His Pro Thr Phe Ser Leu Leu Lys Ser Lys Gln Arg Val
      290                295                300

```

```

<210> 2
<211> 306
<212> PRT
<213> Homo sapiens

```

```

<400> 2
Met Gly Pro Phe Lys Ser Ser Val Phe Ile Leu Ile Leu His Leu Leu
1      5      10      15
Glu Gly Ala Leu Ser Asn Ser Leu Ile Gln Leu Asn Asn Asn Gly Tyr
      20      25      30
Glu Gly Ile Val Val Ala Ile Asp Pro Asn Val Pro Glu Asp Glu Thr
      35      40      45
Leu Ile Gln Gln Ile Lys Asp Met Val Thr Gln Ala Ser Leu Tyr Leu
      50      55      60
Phe Glu Ala Thr Gly Lys Arg Phe Tyr Phe Lys Asn Val Ala Ile Leu
65      70      75      80
Ile Pro Glu Thr Trp Lys Thr Lys Ala Asp Tyr Val Arg Pro Lys Leu
      85      90      95
Glu Thr Tyr Lys Asn Ala Asp Val Leu Val Ala Glu Ser Thr Pro Pro
      100     105     110
Gly Asn Asp Glu Pro Tyr Thr Glu Gln Met Gly Asn Cys Gly Glu Lys
      115     120     125
Gly Glu Arg Ile His Leu Thr Pro Asp Phe Ile Ala Gly Lys Lys Leu
      130     135     140
Ala Glu Tyr Gly Pro Gln Gly Lys Ala Phe Val His Glu Trp Ala His
145     150     155     160
Leu Arg Trp Gly Val Phe Asp Glu Tyr Asn Asn Asp Glu Lys Phe Tyr
      165     170     175
Leu Ser Asn Gly Arg Ile Gln Ala Val Arg Cys Ser Ala Gly Ile Thr
      180     185     190
Gly Thr Asn Val Val Lys Lys Cys Gln Gly Gly Ser Cys Tyr Thr Lys
      195     200     205
Arg Cys Thr Phe Asn Lys Val Thr Gly Leu Tyr Glu Lys Gly Cys Glu
      210     215     220
Phe Val Leu Gln Ser Arg Gln Thr Glu Lys Ala Ser Ile Met Phe Ala
225     230     235     240
Gln His Val Asp Ser Ile Val Glu Phe Cys Thr Glu Gln Asn His Asn
      245     250     255
Lys Glu Ala Pro Asn Lys Gln Asn Gln Lys Cys Asn Leu Arg Ser Thr
      260     265     270
Trp Glu Val Ile Arg Asp Ser Glu Asp Phe Lys Lys Thr Thr Pro Met
      275     280     285
Thr Thr Gln Pro Pro Asn Pro Thr Phe Ser Leu Leu Gln Ile Gly Gln
      290     295     300
Arg Ile
305

```

<210> 3
 <211> 306
 <212> PRT
 <213> Homo sapiens

<400> 3
 Met Gly Leu Phe Arg Gly Phe Val Phe Leu Leu Val Leu Cys Leu Leu
 1 5 10 15
 His Gln Ser Asn Thr Ser Phe Ile Lys Leu Asn Asn Asn Gly Phe Glu
 20 25 30
 Asp Ile Val Ile Val Ile Asp Pro Ser Val Pro Glu Asp Glu Lys Ile
 35 40 45
 Ile Glu Gln Ile Glu Asp Met Val Thr Thr Ala Ser Thr Tyr Leu Phe
 50 55 60
 Glu Ala Thr Glu Lys Arg Phe Phe Phe Lys Asn Val Ser Ile Leu Ile
 65 70 75 80
 Pro Glu Asn Trp Lys Glu Asn Pro Gln Tyr Lys Arg Pro Lys His Glu
 85 90 95
 Asn His Lys His Ala Asp Val Ile Val Ala Pro Pro Thr Leu Pro Gly
 100 105 110
 Arg Asp Glu Pro Tyr Thr Lys Gln Phe Thr Glu Cys Gly Glu Lys Gly
 115 120 125
 Glu Tyr Ile His Phe Thr Pro Asp Leu Leu Leu Gly Lys Lys Gln Asn
 130 135 140
 Glu Tyr Gly Pro Pro Gly Lys Leu Phe Val His Glu Trp Ala His Leu
 145 150 155 160
 Arg Trp Gly Val Phe Asp Glu Tyr Asn Glu Asp Gln Pro Phe Tyr Arg
 165 170 175
 Ala Lys Ser Lys Lys Ile Glu Ala Thr Arg Cys Ser Ala Gly Ile Ser
 180 185 190
 Gly Arg Asn Arg Val Tyr Lys Cys Gln Gly Gly Ser Cys Leu Ser Arg
 195 200 205
 Ala Cys Arg Ile Asp Ser Thr Thr Lys Leu Tyr Gly Lys Asp Cys Gln
 210 215 220
 Phe Phe Pro Asp Lys Val Gln Thr Glu Lys Ala Ser Ile Met Phe Met
 225 230 235 240
 Gln Ser Ile Asp Ser Val Val Glu Phe Cys Asn Glu Lys Thr His Asn
 245 250 255
 Gln Glu Ala Pro Ser Leu Gln Asn Ile Lys Cys Asn Phe Arg Ser Thr
 260 265 270
 Trp Glu Val Ile Ser Asn Ser Glu Asp Phe Lys Asn Thr Ile Pro Met
 275 280 285
 Val Thr Pro Pro Pro Pro Pro Val Phe Ser Leu Leu Lys Ile Arg Gln
 290 295 300
 Arg Ile
 305

<210> 4
 <211> 304
 <212> PRT
 <213> Homo sapiens

<400> 4
 Gly Pro Ile Cys Asn Leu Lys Phe Val Thr Leu Leu Val Ala Leu Ser
 1 5 10 15

```

Ser Glu Leu Pro Phe Leu Gly Ala Gly Val Gln Leu Gln Asp Asn Gly
      20      25      30
Tyr Asn Gly Leu Leu Ile Ala Ile Asn Pro Gln Val Pro Glu Asn Gln
      35      40      45
Asn Leu Ile Ser Asn Ile Lys Glu Met Ile Thr Glu Ala Ser Phe Tyr
      50      55      60
Leu Phe Asn Ala Thr Lys Arg Arg Val Phe Phe Arg Asn Ile Lys Ile
      65      70      75      80
Leu Ile Pro Ala Thr Trp Lys Ala Asn Asn Ser Lys Ile Lys Gln
      85      90      95
Glu Ser Tyr Glu Lys Ala Asn Val Ile Val Thr Asp Trp Tyr Gly Ala
      100      105      110
His Gly Asp Asp Pro Tyr Thr Leu Gln Tyr Arg Gly Cys Gly Lys Glu
      115      120      125
Gly Lys Tyr Ile His Phe Thr Pro Asn Phe Leu Leu Asn Asp Asn Leu
      130      135      140
Thr Ala Gly Tyr Gly Ser Arg Gly Arg Val Phe Val His Glu Trp Ala
      145      150      155      160
His Leu Arg Trp Gly Val Phe Asp Glu Tyr Ile Asn Asp Lys Pro Phe
      165      170      175
Tyr Ile Asn Gly Gln Asn Gln Ile Lys Val Thr Arg Cys Ser Ser Asp
      180      185      190
Ile Thr Gly Ile Phe Val Cys Glu Lys Gly Pro Cys Pro Gln Glu Asn
      195      200      205
Cys Ile Ile Ser Lys Leu Phe Lys Glu Gly Cys Thr Phe Ile Tyr Asn
      210      215      220
Ser Thr Gln Asn Ala Thr Ala Ser Ile Met Phe Met Gln Ser Leu Ser
      225      230      235      240
Ser Val Val Glu Phe Cys Asn Ala Ser Thr His Asn Gln Glu Ala Pro
      245      250      255
Asn Leu Gln Asn Gln Met Cys Ser Leu Arg Ser Ala Trp Asp Val Ile
      260      265      270
Thr Asp Ser Ala Asp Phe His His Ser Phe Pro Met Asn Gly Thr Glu
      275      280      285
Leu Pro Pro Pro Pro Thr Phe Ser Leu Val Gln Ala Gly Asp Lys Val
      290      295      300

```

```

<210> 5
<211> 259
<212> PRT
<213> Homo sapiens

```

```

<400> 5
Phe Ser Leu Lys Val Ile Leu Phe Leu Ser Leu Leu Leu Ser Pro Val
1      5      10      15
Leu Lys Ser Ser Leu Val Thr Leu Asn Asn Asn Gly Tyr Asp Gly Ile
      20      25      30
Val Ile Ala Ile Asn Pro Ser Val Pro Glu Asp Glu Lys Leu Ile Gln
      35      40      45
Asn Ile Lys Glu Met Val Thr Glu Ala Ser Thr His Leu Phe His Ala
      50      55      60
Thr Lys Gln Arg Ala Tyr Phe Arg Asn Val Ser Ile Leu Ile Pro Met
      65      70      75      80
Thr Tyr Lys Ser Lys Ser Glu Tyr Leu Ile Pro Lys Gln Glu Thr Tyr
      85      90      95
Asp Gln Ala Asp Val Ile Val Ala Asp Leu Tyr Leu Lys Tyr Gly Asp

```

[illegible]

| | |
|-------|--------------|
| <210> | 6 |
| <211> | 279 |
| <212> | PRT |
| <213> | Mus musculus |

| | | | | | | | | | | | | | | | | | |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| <400> | 6 | | | | | | | | | | | | | | | | |
| Leu | Lys | Leu | Lys | Glu | Asn | Gly | Tyr | Asp | Gly | Leu | Leu | Val | Ala | Ile | Asn | | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | | | |
| Pro | Arg | Val | Pro | Glu | Asp | Leu | Lys | Leu | Ile | Thr | Asn | Ile | Lys | Glu | Met | | |
| | | | 20 | | | | | 25 | | | | | 30 | | | | |
| Ile | Thr | Glu | Ala | Ser | Phe | Tyr | Leu | Phe | Asn | Ala | Thr | Lys | Arg | Arg | Val | | |
| | | 35 | | | | 40 | | | | | | 45 | | | | | |
| Phe | Phe | Arg | Asn | Val | Gln | Ile | Leu | Val | Pro | Ala | Thr | Trp | Thr | Asp | His | | |
| | 50 | | | | 55 | | | | | | 60 | | | | | | |
| Asn | Tyr | Ser | Arg | Val | Arg | Gln | Glu | Ser | Tyr | Asp | Lys | Ala | Asn | Val | Ile | | |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 | | |
| Val | Ala | Glu | Gln | Ser | Glu | Glu | His | Gly | Asp | Asp | Pro | Tyr | Thr | Leu | Gln | | |
| | | | | 85 | | | | | 90 | | | | | 95 | | | |
| His | Arg | Gly | Cys | Gly | Gln | Glu | Gly | Arg | Tyr | Ile | His | Phe | Thr | Pro | Ser | | |
| | | | 100 | | | | | 105 | | | | | 110 | | | | |
| Phe | Leu | Leu | Asn | Asp | Glu | Leu | Ala | Ala | Gly | Tyr | Gly | Ala | Arg | Gly | Arg | | |
| | | 115 | | | | | 120 | | | | | 125 | | | | | |
| Val | Phe | Val | His | Glu | Trp | Ala | His | Leu | Arg | Trp | Gly | Val | Phe | Asp | Glu | | |
| | 130 | | | | | 135 | | | | | 140 | | | | | | |
| Tyr | Asn | Asn | Asp | Lys | Pro | Phe | Tyr | Val | Asn | Gly | Arg | Asn | Glu | Ile | Gln | | |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 | | |
| Val | Thr | Arg | Cys | Ser | Ser | Asp | Ile | Thr | Gly | Val | Phe | Val | Cys | Glu | Lys | | |
| | | | | 165 | | | | | 170 | | | | | 175 | | | |
| Gly | Leu | Cys | Pro | His | Glu | Asp | Cys | Ile | Ile | Ser | Lys | Ile | Phe | Arg | Glu | | |
| | | | 180 | | | | | 185 | | | | | 190 | | | | |
| Gly | Cys | Thr | Phe | Leu | Tyr | Asn | Ser | Thr | Gln | Asn | Ala | Thr | Gly | Ser | Ile | | |
| | | 195 | | | | | 200 | | | | | 205 | | | | | |
| Met | Phe | Met | Pro | Ser | Leu | Pro | Ser | Val | Val | Glu | Phe | Cys | Asn | Glu | Ser | | |
| | 210 | | | | | 215 | | | | | 220 | | | | | | |
| Thr | His | Asn | Gln | Glu | Ala | Pro | Asn | Leu | Gln | Asn | Gln | Val | Cys | Ser | Leu | | |

3

<210> 8
 <211> 308
 <212> PRT
 <213> Mus musculus

<400> 8
 Met Val Pro Gly Leu Gln Val Leu Leu Phe Leu Thr Leu His Leu Leu
 1 5 10 15
 Gln Asn Thr Glu Ser Ser Met Val His Leu Asn Ser Asn Gly Tyr Glu
 20 25 30
 Gly Val Val Ile Ala Ile Asn Pro Ser Val Pro Glu Asp Glu Arg Leu
 35 40 45
 Ile Pro Ser Ile Lys Glu Met Val Thr Gln Ala Ser Thr Tyr Leu Phe
 50 55 60
 Glu Ala Ser Gln Gly Arg Val Tyr Phe Arg Asn Ile Ser Ile Leu Val
 65 70 75 80
 Pro Met Thr Trp Lys Ser Lys Ser Glu Tyr Leu Met Pro Lys Arg Glu
 85 90 95
 Ser Tyr Asp Lys Ala Asp Val Ile Val Ala Asp Pro His Leu Gln His
 100 105 110
 Gly Asp Asp Pro Tyr Thr Leu Gln Tyr Gly Gln Cys Gly Asp Arg Gly
 115 120 125
 Gln Tyr Ile His Phe Thr Pro Asn Phe Leu Leu Thr Asp Asn Leu Arg
 130 135 140
 Ile Tyr Gly Pro Arg Gly Arg Val Phe Val His Glu Trp Ala His Leu
 145 150 155 160
 Arg Trp Gly Val Phe Asp Glu Tyr Asn Val Asp Arg Pro Phe Tyr Ile
 165 170 175
 Ser Arg Lys Asn Thr Ile Glu Ala Thr Arg Cys Ser Ala Ser Ile Thr
 180 185 190
 Gly Lys Lys Val Val His Glu Cys Gln Arg Gly Ser Cys Val Thr Arg
 195 200 205
 Ala Cys Arg Arg Asp Ser Lys Thr Arg Leu Tyr Glu Pro Lys Cys Thr
 210 215 220
 Phe Ile Pro Asp Lys Ile Gln Thr Ala Gly Ala Ser Ile Met Phe Met
 225 230 235 240
 Gln Asn Leu Asn Ser Val Val Glu Phe Cys Thr Glu Asn Asn His Asn
 245 250 255
 Ala Glu Ala Pro Asn Leu Gln Asn Lys Met Cys Asn Arg Arg Ser Thr
 260 265 270
 Trp Asp Val Ile Lys Ala Ser Ala Asp Phe Gln Asn Ser Pro Pro Met
 275 280 285
 Arg Gly Thr Glu Ala Pro Pro Pro Pro Thr Phe Ser Leu Leu Lys Ser
 290 295 300
 Arg Arg Arg Val
 305

<210> 9
 <211> 307
 <212> PRT
 <213> Mus musculus

<400> 9
 Met Glu Ser Leu Lys Ser Pro Val Phe Leu Leu Ile Leu His Leu Leu
 1 5 10 15
 Glu Gly Val Leu Ser Glu Ser Leu Ile Gln Leu Asn Asn Asn Gly Tyr

•

•

•

Ser Tyr Asp Gln Ala Asp Val Ile Val Ala Asp Pro His Leu Gln His
 100 105 110
 Gly Asp Asp Pro Tyr Thr Leu Gln Tyr Gly Gln Cys Gly Asp Arg Gly
 115 120 125
 Gln Tyr Ile His Phe Thr Pro Asn Phe Leu Leu Thr Asp Asn Leu Gly
 130 135 140
 Ile Tyr Gly Pro Arg Gly Arg Val Phe Val His Glu Trp Ala His Leu
 145 150 155 160
 Arg Trp Gly Val Phe Asp Glu Tyr Asn Met Asp Arg Pro Phe Tyr Met
 165 170 175
 Ser Arg Lys Asn Thr Val Glu Ala Thr Arg Cys Ser Thr Asp Ile Thr
 180 185 190
 Gly Thr Ser Val Val Arg Glu Cys Gln Gly Gly Ser Cys Val Ser Arg
 195 200 205
 Arg Cys Arg Arg Asp Ala Lys Thr Gly Met Gln Glu Ala Lys Cys Thr
 210 215 220
 Phe Ile Pro Asn Lys Ser Gln Thr Ala Arg Gly Ser Ile Met Phe Met
 225 230 235 240
 Gln Ser Leu Asp Ser Val Val Glu Phe Cys Thr Glu Lys Thr His Asn
 245 250 255
 Val Glu Ala Pro Asn Leu Gln Asn Lys Met Cys Asn Leu Arg Ser Thr
 260 265 270
 Trp Asp Val Ile Lys Ala Ser Ala Asp Phe Gln Asn Ala Ser Pro Met
 275 280 285
 Thr Gly Thr Glu Ala Pro Pro Leu Pro Thr Phe Ser Leu Leu Lys Ser
 290 295 300
 Arg Gln Arg Val
 305

<210> 11
 <211> 306
 <212> PRT
 <213> Sus scrofa

<400> 11
 Met Gly Ser Phe Arg Ser Ser Leu Phe Ile Leu Val Leu His Leu Leu
 1 5 10 15
 Glu Gly Ala Gln Ser Asn Ser Leu Ile Gln Leu Asn Gly Asn Gly Tyr
 20 25 30
 Glu Gly Ile Val Ile Ala Ile Asp Pro Asn Val Pro Glu Asp Glu Arg
 35 40 45
 Leu Ile Gln Asn Ile Lys Asp Met Val Thr Lys Ala Ser Pro Tyr Leu
 50 55 60
 Phe Glu Ala Thr Glu Lys Arg Phe Tyr Phe Lys Asn Val Ala Ile Leu
 65 70 75 80
 Ile Pro Ala Ser Trp Lys Ala Lys Pro Glu Tyr Val Lys Pro Lys Leu
 85 90 95
 Glu Thr Tyr Lys Asn Ala Asp Val Val Thr Glu Pro Asn Pro Pro
 100 105 110
 Glu Asn Asp Gly Pro Tyr Thr Glu Gln Met Gly Asn Cys Gly Glu Lys
 115 120 125
 Gly Glu Lys Ile Tyr Phe Thr Pro Asp Phe Val Ala Gly Lys Lys Val
 130 135 140
 Leu Gln Tyr Gly Pro Gln Gly Arg Val Phe Val His Glu Trp Ala His
 145 150 155 160
 Leu Arg Trp Gly Val Phe Asn Glu Tyr Asn Asn Glu Gln Lys Phe Tyr

```

                165                170                175
Leu Ser Asn Lys Lys Glu Gln Pro Val Ile Cys Ser Ala Ala Ile Arg
                180                185                190
Gly Thr Asn Val Leu Pro Gln Cys Gln Gly Gly Ser Cys Val Thr Lys
                195                200                205
Pro Cys Arg Ala Asp Arg Val Thr Gly Leu Phe Gln Lys Glu Cys Glu
                210                215                220
Phe Ile Pro Asp Pro Gln Gln Ser Glu Lys Ala Ser Ile Met Phe Ala
225                230                235                240
Gln Ser Ile Asp Thr Val Val Glu Phe Cys Lys Glu Lys Asn His Asn
                245                250                255
Lys Glu Ala Pro Asn Asp Gln Asn Gln Lys Cys Asn Leu Arg Ser Thr
                260                265                270
Trp Glu Val Ile Gln Asp Ser Glu Asp Phe Lys Lys Thr Thr Pro Met
                275                280                285
Thr Thr Gln Pro Pro Ala Pro Thr Phe Ser Leu Leu Gln Ile Gly Gln
                290                295                300
Arg Ile
305

```

```

<210> 12
<211> 308
<212> PRT
<213> Bos taurus

```

```

<400> 12
Met Val Pro Arg Leu Thr Val Ile Leu Phe Leu Thr Leu His Leu Leu
1      5      10      15
Pro Gly Met Lys Ser Ser Met Val Asn Leu Ile Asn Asn Gly Tyr Asp
20      25      30
Gly Ile Val Ile Ala Ile Asn Pro Ser Val Pro Glu Asp Glu Lys Leu
35      40      45
Ile Gln Asn Ile Lys Glu Met Val Thr Glu Ala Ser Thr Tyr Leu Phe
50      55      60
His Ala Thr Lys Arg Arg Val Tyr Phe Arg Asn Val Ser Ile Leu Ile
65      70      75      80
Pro Met Thr Trp Lys Ser Lys Ser Glu Tyr Leu Met Pro Lys Gln Glu
85      90      95
Ser Tyr Asp Gln Ala Glu Val Ile Val Ala Asn Pro Tyr Leu Lys His
100     105     110
Gly Asp Asp Pro Tyr Thr Leu Gln Tyr Gly Arg Cys Gly Glu Lys Gly
115     120     125
Gln Tyr Ile His Phe Thr Pro Asn Phe Leu Leu Thr Asn Asn Leu Pro
130     135     140
Ile Tyr Gly Ser Arg Gly Arg Ala Phe Val His Glu Trp Ala His Leu
145     150     155     160
Arg Trp Gly Ile Phe Asp Glu Tyr Asn Gly Asp Gln Pro Phe Tyr Ile
165     170     175
Ser Arg Arg Asn Thr Ile Glu Ala Thr Arg Cys Ser Thr His Ile Thr
180     185     190
Gly Thr Asn Val Ile Val Lys Cys Gln Gly Gly Ser Cys Ile Thr Arg
195     200     205
Pro Cys Arg Arg Asp Ser Gln Thr Gly Leu Tyr Glu Ala Lys Cys Thr
210     215     220
Phe Ile Pro Glu Lys Ser Gln Thr Ala Arg Glu Ser Ile Met Phe Met
25      230     235     240

```

Gln Ser Leu His Ser Val Thr Glu Phe Cys Thr Glu Lys Thr His Asn
 245 250 255
 Val Glu Ala Pro Asn Leu Gln Asn Lys Met Cys Asn Gly Lys Ser Thr
 260 265 270
 Trp Asp Val Ile Met Asn Ser Thr Asp Phe Gln Asn Thr Ser Pro Met
 275 280 285
 Thr Glu Met Asn Pro Pro Thr Gln Pro Thr Phe Ser Leu Leu Lys Ser
 290 295 300
 Lys Gln Arg Val
 305

<210> 13
 <211> 247
 <212> PRT
 <213> Ciona intestinalis

<400> 13
 Glu Ser Thr Thr Leu Leu Asn Ser Ile Lys Ala Ala Trp Thr Glu Ala
 1 5 10 15
 Ser Ala Ala Leu Tyr Thr Ala Thr Arg Lys Arg Ala Tyr Phe Gly Asn
 20 25 30
 Ile Thr Ile Leu Val Pro Lys Ser Trp Asn Gly Thr Tyr Lys Arg Ala
 35 40 45
 Phe Asp Glu Thr Tyr Asp Ala Ala Asp Val Val Val Thr Asn Thr Asn
 50 55 60
 Arg Val Arg Gly Asn Ile Pro Tyr Val Leu Gln Pro Gly Gly Cys Gly
 65 70 75 80
 Glu Pro Gly Thr Arg Ile Phe Thr Thr Arg Asp Tyr Tyr Thr Asn Asp
 85 90 95
 Thr Tyr Val Glu Ser Phe Gly Gln Arg Gly Lys Val Met Val His Glu
 100 105 110
 Trp Ser His Tyr Arg Trp Gly Val Phe Asp Glu Ile Ala Ser Gly Asp
 115 120 125
 Tyr Ala Pro Phe Tyr Ile Ser Ser Thr Gly Thr Ile Glu Ala Thr Arg
 130 135 140
 Cys Ser Leu Gly Ile Gln Gly Glu Asn Met Ile Val Gln Asn Asn Glu
 145 150 155 160
 Ile Val Gln Asp Val Cys Asn Tyr Asp Pro Gln Thr Leu Leu Pro Asn
 165 170 175
 Ser Thr Asp Cys Lys Phe Ile Leu Ala Trp Asp Gln Asp Leu Asp Leu
 180 185 190
 Lys Ala Ser Ile Met Ser Tyr Gln Tyr Val Asn Glu Ile Asn Gly Phe
 195 200 205
 Cys Asp Asp Asn Asp Asn Asp Pro Leu Asn Arg His Asn Arg Glu Ala
 210 215 220
 Pro Asn Glu His Asn Asp Lys Cys Asn Lys Arg Ser Val Trp Asp Val
 225 230 235 240
 Ile Thr Ser Ser Val Asp Phe
 245

<210> 14
 <211> 274
 <212> PRT
 <213> Ciona intestinalis

<220>
 <221> MISC_FEATURE
 <222> 49
 <223> any natural amino acid residue

<220>
 <221> MISC_FEATURE
 <222> 263
 <223> any natural amino acid residue

<400> 14
 Asn Pro Ala Val Pro Glu Asp Pro Asn Leu Val Ser Ala Ile Gln Ser
 1 5 10 15
 Ser Trp Ile Glu Ala Ser Gly Asp Leu Tyr Thr Ala Thr Arg Gln Arg
 20 25 30
 Ser Tyr Phe Gly Glu Ile Thr Ile Leu Ile Pro Lys Thr Trp Ser Lys
 35 40 45
 Xaa Lys Leu Val Ile Asn Gly Ser Glu Ser Tyr Glu Thr Ala Asp Val
 50 55 60
 Leu Ile Ala Glu Ala Asn Pro Val Tyr Gln Asp Thr Pro Tyr Thr Leu
 65 70 75 80
 Gln Tyr Gly Asn Cys Gly Glu Thr Ala Ser Tyr Ile His Leu Thr Pro
 85 90 95
 Asp Tyr Leu Thr Asn Gln Ser Phe Val Glu Asp Phe Gly Pro Arg Gly
 100 105 110
 Lys Ala Ile Val His Glu Trp Ala His Leu Arg Trp Gly Val Phe Asp
 115 120 125
 Glu Thr Tyr Thr Thr Gly Tyr Ser Pro Tyr Tyr Tyr Asp Ser His Gly
 130 135 140
 Thr Val Gln Ala Thr Arg Cys Pro Ser Thr Leu Asp Gly Lys Asn Lys
 145 150 155 160
 Val Val Asp Tyr Ser Thr Gly Asn Ser Arg Asp Cys Gln Arg Asn Leu
 165 170 175
 Glu Asn Gly Leu Met Glu Asp Gly Cys Leu Phe Leu Pro Tyr Ala Glu
 180 185 190
 Gln Ser Ala Asp Leu Thr Thr Ser Leu Met Ser His Gln Tyr Leu Ser
 195 200 205
 Gln Val Thr Met Phe Cys His Asn Asp Glu Thr Asp Ser Tyr Asn His
 210 215 220
 His Asn Arg Glu Ala Pro Asn Glu Gln Asn Arg Leu Cys Asp Leu Lys
 225 230 235 240
 Ser Ala Trp Glu Val Ile Met Glu Ser Lys Asp Phe Leu Asn Asn Ala
 245 250 255
 Asn Pro Arg Asn Met Val Xaa Asn Thr Asn Pro Ile Phe Arg Leu Val
 260 265 270
 Gln Ile

<210> 15
 <211> 282
 <212> PRT
 <213> Ciona intestinalis

<400> 15
 Val Thr Leu Val Asn Asn Gly Tyr Asp Gly Ile Val Val Ala Ile Asn
 1 5 10 15
 Pro Ala Val Ala Glu Asp Glu Thr Leu Ile Asn Lys Ile Arg Asn Met

2

2

2

Gly Lys Ala Leu Val His Glu Trp Ala His Leu Arg Trp Gly Val Tyr
 130 135 140
 Asp Glu Tyr Ala Ser Glu Gly Tyr Ala Pro Phe Tyr Tyr Ser Asn Arg
 145 150 155 160
 Gly Gly Gly Gln Pro Tyr Met Glu Ala Thr Arg Cys Pro Leu Ala Leu
 165 170 175
 Gly Gly Val Thr Arg Tyr Pro Asn Pro Ala Asn Gly Asn Gln Leu Glu
 180 185 190
 His Cys Thr Ser Asp Pro Asn Asn Asn Phe Leu Pro Leu Glu Gly Cys
 195 200 205
 Leu Phe Phe Pro Phe Ser Glu Leu Gly Gln Pro Asp Asp Leu Ser Ala
 210 215 220
 Ser Leu Leu Ser His Gln Phe Val Asp Gln Val Val Asp Phe Cys His
 225 230 235 240
 Asn Asp Thr Asn Asp Pro Thr Asn Leu His Asn Lys Glu Ala Pro Asn
 245 250 255
 Glu His Asn Arg Leu Cys Asp Gln Arg Ser Val Trp Glu Ile Met Met
 260 265 270
 Ala Ser Arg Asp Phe Asn Ala Val Asn His Pro Asn Pro Thr
 275 280 285

<210> 17
 <211> 273
 <212> PRT
 <213> Ciona intestinalis

<220>
 <221> MISC_FEATURE
 <222> 267
 <223> any natural amino acid residue

<400> 17
 Val Thr Leu Val Gly Asn Lys Tyr Lys Gly Ile Val Val Ala Ile Asn
 1 5 10 15
 Pro Ser Ile Pro Glu Asp Gln Asp Leu Ile Asn Asn Ile Lys Ala Leu
 20 25 30
 Leu Asn Glu Ala Ser Pro Ile Leu Trp Ser Ala Thr Lys Asn Arg Ala
 35 40 45
 Tyr Phe Gly Glu Val Thr Ile Leu Val Pro Ser Thr Trp Thr Gly Ser
 50 55 60
 Tyr Thr Gln Ala Thr His Gly Gln Val Tyr Asn Lys Ala Asp Ile Ile
 65 70 75 80
 Val Ala Asp Pro Asn Pro Gln Tyr Met Asp Thr Pro Tyr Thr Ile Gln
 85 90 95
 Tyr Gln Gln Cys Gly Asp Pro Gly Glu Tyr Ile His Leu Thr Pro Asn
 100 105 110
 Phe Ile Asn Glu Lys Asn Asp Phe Val Glu Asn Tyr Gly Ser Lys Gly
 115 120 125
 Lys Ala Leu Val His Glu Trp Ala His Leu Arg Trp Gly Ile Tyr Asp
 130 135 140
 Glu Tyr Ala Ser Glu Gly Tyr Asp Pro Phe Tyr Tyr Ser Ser Thr Gln
 145 150 155 160
 Tyr Val Gln Pro Thr Leu Glu Ala Thr Arg Cys Pro Leu Ser Val Ala
 165 170 175
 Gly Met Met Leu Tyr Leu Asp Pro Leu Ser Gly Lys Phe Glu Phe Cys
 180 185 190

Thr Ser Asn Pro Glu Asn Asn Phe Leu Pro Glu Glu Gly Cys Ile Phe
 195 200 205
 Phe Pro Arg Ser Lys Glu Gly Gln Pro Ala Asp Leu Ile Tyr Ser Phe
 210 215 220
 Ser Leu Thr Gln Val Val Asp Phe Cys His Asn Asp Thr Asn Asp Pro
 225 230 235 240
 Thr Asn Leu His Asn Lys Glu Ala Pro Asn Glu His Asn Arg Leu Cys
 245 250 255
 Asp Gln Arg Ser Val Trp Glu Val Met Asn Xaa Ser Ser Asp Phe Lys
 260 265 270
 Gln

<210> 18
 <211> 279
 <212> PRT
 <213> Ciona intestinalis

<400> 18
 Val Lys Leu Gln Ser Asn Gly Tyr Asp Gly Val Leu Val Ala Ile Asn
 1 5 10 15
 Pro Ala Val Pro Glu Asn Glu Thr Leu Ile Arg Asn Ile Arg Ala Ser
 20 25 30
 Ile Asp Leu Ile Gly Ala Thr Ser Ser His Ser Leu Phe Ile Leu Thr
 35 40 45
 Lys Lys Arg Ala Tyr Phe Arg Asn Ile Asn Ile Leu Val Pro Lys Thr
 50 55 60
 Trp Thr Gly Ala Arg Tyr Asp Thr Ala Ile Gly Leu Ser Tyr Arg Lys
 65 70 75 80
 Ala Asp Val Ile Val Ala Pro Ala Asn Ser Ala Lys Gly Asn Asn Pro
 85 90 95
 Tyr Thr Arg Gln Thr Gly Gly Cys Gly Asp Pro Gly Thr Tyr Ile His
 100 105 110
 Ile Thr Pro Glu Tyr Val Tyr Asn Pro Gln Glu His Leu Tyr Gly Pro
 115 120 125
 Arg Gly Lys Lys Ala Ile Val His Glu Trp Ser His Leu Arg Trp Gly
 130 135 140
 Val Phe Asp Glu Tyr Ala Thr Gly Asn His Lys Arg His Tyr Ile Asp
 145 150 155 160
 Ser Asn Asn Ile Leu Gln Ala Thr Arg Cys Pro Leu Ser Leu Arg Gly
 165 170 175
 Met Asn Ile Glu Tyr Ala Pro Pro Tyr Asn Thr Arg Cys Ala Val Asn
 180 185 190
 Arg Ser Ser Leu Leu Pro Leu Thr Glu Asn Cys Tyr Phe Phe Pro Ala
 195 200 205
 Ser Arg Gln Pro Arg Gly Leu Asn Ser Ser Met Met Ser Phe Ser Tyr
 210 215 220
 Leu His Ser Val Glu Ala Phe Cys His Asn Asp Pro Asn Glu Pro Ile
 225 230 235 240
 Asn Phe His Asn Ser Glu Ala Asp Asn Glu Gln Asn Ala Lys Cys Asn
 245 250 255
 Leu Lys Ser Leu Trp Glu Val Ile Gly Ala Ser Pro Asp Phe Arg Glu
 260 265 270
 Gly Ala Asn Pro Pro Asn Pro
 275

<210> 19
 <211> 241
 <212> PRT
 <213> Danio rerio

<400> 19
 Ser Val Phe Val Val Leu Trp Met Leu Leu Pro Tyr Pro Phe Thr Gly
 1 5 10 15
 Ile Lys Leu Asp Gly Gly Gly Tyr Val Asp Ile Ser Ile Ala Ile Gly
 20 25 30
 Ala Lys Val Lys Gln Asp Asp Thr Leu Ile Asp Lys Ile Lys Glu Met
 35 40 45
 Val Thr Asp Gly Ser Phe Tyr Leu Tyr His Ala Leu Asp Lys Lys Val
 50 55 60
 Tyr Leu Lys Asp Ala Thr Ile Leu Val Pro Ser Gln Trp Ser Cys Lys
 65 70 75 80
 Ser Cys Ser Ile Ala Arg Thr Glu Leu Phe Glu Lys Ala Gln Ile Lys
 85 90 95
 Ile Asp His Ala Lys Leu Met Glu Pro Arg Thr Lys Leu Tyr Gly Glu
 100 105 110
 Cys Gly Val Gly Gly Glu Tyr Ile His Phe Thr Pro Asp Phe Leu Leu
 115 120 125
 Asn Asp Ser Ala Ile Gln Met Tyr Gly Pro Arg Gly Lys Val Phe Leu
 130 135 140
 His Glu Trp Ala His Leu Arg Trp Gly Val Tyr Asp Glu Tyr Asn Glu
 145 150 155 160
 Glu Lys Pro Phe Tyr Leu Ser Asn Gly Arg Val Glu Tyr Thr Arg Cys
 165 170 175
 Thr Thr Asn Ile Glu Gly Gln Cys Phe Glu Ile Asn Gly Gly Ser Leu
 180 185 190
 Gln Ser Cys Arg Ile Asn Pro Glu Thr Phe Leu Pro Ser Ser Asp Cys
 195 200 205
 Glu Leu Ser Pro Asn Lys Asp Gln Asn Thr Asp Ser Ser Val Met Cys
 210 215 220
 Ser Pro Ser Leu Gln Ser Leu Thr Thr Phe Cys Arg Glu Thr Glu His
 225 230 235 240
 Asn

<210> 20
 <211> 268
 <212> PRT
 <213> Gallus gallus
 <220>
 <221> MISC_FEATURE
 <222> 39
 <223> any natural amino acid residue

<220>
 <221> MISC_FEATURE
 <222> 61
 <223> any natural amino acid residue

<220>
 <221> MISC_FEATURE
 <222> 65
 <223> any natural amino acid residue

<220>
 <221> MISC_FEATURE
 <222> 77
 <223> any natural amino acid residue

<220>
 <221> MISC_FEATURE
 <222> 168
 <223> any natural amino acid residue

<220>
 <221> MISC_FEATURE
 <222> 171
 <223> any natural amino acid residue

<220>
 <221> MISC_FEATURE
 <222> 172
 <223> any natural amino acid residue

<220>
 <221> MISC_FEATURE
 <222> 197
 <223> any natural amino acid residue

<400> 20
 Met Gly Val Phe Arg Ser Leu Ile Phe Leu Leu Ser Phe Gln Leu Leu
 1 5 10 15
 His Val Ala Lys Gly Ser Met Val Lys Leu Asn Glu Ser Gly Tyr Glu
 20 25 30
 Asp Leu Val Val Cys Asn Xaa Ser Gln Arg Asp Arg Arg Cys Gln His
 35 40 45
 His Pro Glu His Lys Gly Asn Asp Gln Arg Cys Phe Xaa Leu Phe Val
 50 55 60
 Xaa Ser Tyr Lys Thr Ser Ile Phe Leu Gln Ala Leu Xaa Arg Ile Ile
 65 70 75 80
 Leu Pro Lys Thr Trp Lys Lys Asn Ser Thr Tyr Ser Arg Leu Lys Thr
 85 90 95
 Glu Ser Tyr Asn Lys Ala Asp Val Ile Ile Ala Asp Pro Tyr Leu Lys
 100 105 110
 Tyr Gly Asp Asp Pro Tyr Thr Leu Gln Tyr Gly Gly Cys Ala Met Lys
 115 120 125
 Gly Arg Tyr Ile His Phe Thr Pro Asn Phe Leu Leu Asp Ser Ser Leu
 130 135 140
 Ile Lys Val Tyr Gly Glu Arg Gly Arg Val Leu Val His Glu Trp Ala
 145 150 155 160
 His Thr Ser Val Gly Cys Val Xaa Arg Ile Xaa Xaa Arg Arg Asn Leu
 165 170 175
 Phe Asp Val Ser Glu Asn Ala Arg Val Glu Pro Thr Arg Cys Ser Ala
 180 185 190
 Gly Val Thr Trp Xaa Thr Cys Ile Pro Lys Leu Gln Trp Lys Thr Val
 195 200 205
 Tyr Asp Lys Arg Met Pro Ser Met Met Val Ser Tyr Met Lys Leu Gly
 210 215 220
 Cys Gly Ile Gly Asn Gly Ser Ser Ile Lys Lys Arg Lys Asn Ser Ile
 225 230 235 240
 Met Tyr Met Gln Ser Leu Pro Ser Val Val Glu Ser Val Ile Lys Ile

| | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|
| | | 245 | | 250 | | 255 |
| Leu | Ile | Asn | Ser | Glu | Val | Gln |
| | | | | Met | Arg | Asn |
| | | 260 | | 265 | | Arg |

<210> 21
 <211> 192
 <212> PRT
 <213> Gallus gallus

<400> 21
 Met Gly Val Phe Arg Ser Leu Ile Phe Leu Leu Ser Phe Gln Leu Leu
 1 5 10 15
 His Val Ala Lys Gly Ser Met Val Lys Leu Asn Glu Ser Gly Tyr Glu
 20 25 30
 Gly Leu Val Val Ala Ile Asn Pro Ser Val Thr Glu Asp Ala Asn Ile
 35 40 45
 Ile Leu Asn Thr Lys Ala Met Ile Lys Asp Ala Ser Asn Tyr Leu Phe
 50 55 60
 Glu Ala Thr Lys His Arg Phe Phe Phe Lys Ser Val Lys Ile Ile Leu
 65 70 75 80
 Pro Lys Thr Trp Lys Lys Asn Ser Thr Tyr Ser Arg Leu Lys Thr Glu
 85 90 95
 Ser Tyr Asn Lys Ala Asp Val Ile Ile Ala Asp Pro Tyr Leu Lys Tyr
 100 105 110
 Gly Asp Asp Pro Tyr Thr Leu Gln Tyr Gly Gly Cys Ala Met Lys Gly
 115 120 125
 Arg Tyr Ile His Phe Thr Pro Asn Phe Leu Leu Asp Ser Ser Leu Ile
 130 135 140
 Lys Val Tyr Gly Glu Arg Gly Arg Val Phe Val His Glu Trp Ala His
 145 150 155 160
 Leu Arg Trp Gly Val Phe Asp Glu Tyr Asn Asn Asp Ala Pro Phe Tyr
 165 170 175
 Val Ser Glu Asn Ala Arg Val Glu Pro Thr Arg Cys Ser Ala Gly Val
 180 185 190

<210> 22
 <211> 202
 <212> PRT
 <213> Salmo salar

<400> 22
 Val Leu Leu Leu Val Tyr Leu Ser Gly Ser Thr Phe Gly Ile Lys Leu
 1 5 10 15
 Thr Gly Asn Gly Tyr Thr Asp Ile Leu Ile Ala Ile Asn Pro Val Val
 20 25 30
 Pro Glu Asp Pro Val Leu Ile Thr Gln Ile Glu Glu Met Ile Lys Glu
 35 40 45
 Ala Ser Arg His Leu Leu Asn Ala Thr Lys Lys His Leu Tyr Phe Lys
 50 55 60
 Glu Val Ala Ile Leu Val Pro Pro Asn Trp Asn Lys Gly Asn Tyr Ser
 65 70 75 80
 Lys Ala Lys Thr Glu Val Tyr Asn Lys Ala Asn Ile Ile Ile Asp Glu
 85 90 95
 Pro Asn Arg Leu His Gly Asp Gln Pro Tyr Thr Leu Gln Tyr Gly Glu
 100 105 110

Cys Gly Ser Glu Gly Gln Tyr Ile His Leu Thr Pro Asp Phe Met Leu
 115 120 125
 Asn Asp Asp Val Ser Lys Tyr Tyr Gly Pro Arg Gly Lys Val Phe Val
 130 135 140
 His Glu Trp Ala His Leu Arg Trp Gly Val Phe Asp Glu Tyr Asn Glu
 145 150 155 160
 Glu Lys Pro Phe Tyr Leu Ser Gly Ser Ile Ile Glu Ala Thr Arg Cys
 165 170 175
 Thr Ile Asn Ile Thr Gly Lys Tyr Ile His Lys Arg Asp Gln Lys Asp
 180 185 190
 Cys Thr Thr Asp Pro Val Thr Gly Leu Tyr
 195 200

<210> 23
 <211> 202
 <212> PRT
 <213> Strongylocentrotus purpuratus

<220>
 <221> MISC_FEATURE
 <222> 186
 <223> any natural amino acid residue

<220>
 <221> MISC_FEATURE
 <222> 192
 <223> any natural amino acid residue

<400> 23
 Asp Val Pro Glu Asp Gln Thr Ile Ile Asp Asn Leu Ile Asp Ile Phe
 1 5 10 15
 Ser Ser Gly Ser Gly His Leu Phe Thr Ala Thr Arg Arg Arg Ala Tyr
 20 25 30
 Trp Arg Asn Ile Thr Ile Leu Ile Pro Lys Thr Trp Thr Pro Lys Pro
 35 40 45
 Glu Tyr Glu Pro Ala Arg Thr Glu Ser Phe Glu Thr Ala Asn Val Ile
 50 55 60
 Ile Asp Thr Ala Asn Pro Glu Trp Glu Asp Asn Pro Tyr Thr Leu Gln
 65 70 75 80
 Leu Gly Gly Cys Gly Val His Gly Glu Tyr Ile His Leu Thr Pro Ser
 85 90 95
 Tyr Ile Thr Asp Arg Ala Asn Ser Glu Tyr Ile Trp Gly Ser Met Gly
 100 105 110
 Lys Leu Leu Ile His Glu Trp Gly His Leu Arg Trp Gly Leu Phe Asp
 115 120 125
 Glu Tyr His Thr Asp Asp Asp Gly Val Gln Lys Phe Tyr Ala Asp Ser
 130 135 140
 Arg Gly Glu Ile Val Ala Thr Arg Cys Thr Asp Gln Leu Asn Gly Glu
 145 150 155 160
 Ala Leu Asn Ile Asn Thr Phe Ala Pro Cys Gln Arg Asp Arg Asp Thr
 165 170 175
 Gly Leu Tyr Glu Asp Asp Cys Phe Tyr Xaa Pro Asp Leu Glu Gly Xaa
 180 185 190
 Thr Ser Pro Gly Ser Ile Met Tyr Ala Gln
 195 200

<210> 24
 <211> 192
 <212> PRT
 <213> Strongylocentrotus purpuratus

<400> 24
 Gly Arg Ile Leu Met Ser Val Val Val Cys Cys Leu Val Leu Phe Ser
 1 5 10 15
 Gly Val Ser Gly Ser Asp Leu Arg Asn Ser Ile Thr Ile Gln Asp Gly
 20 25 30
 Gly Tyr Glu Asn Val Leu Ile Ala Ile Asn Lys Asp Val Pro Glu Asp
 35 40 45
 Gln Thr Ile Ile Asp Asn Leu Ile Asp Ile Phe Ser Ser Gly Ser Gly
 50 55 60
 His Leu Phe Thr Ala Thr Arg Arg Arg Ala Tyr Trp Arg Asn Ile Thr
 65 70 75 80
 Ile Leu Ile Pro Lys Thr Trp Thr Pro Lys Pro Glu Tyr Glu Pro Ala
 85 90 95
 Arg Thr Glu Ser Phe Glu Thr Ala Asn Val Ile Ile Asp Thr Ala Asn
 100 105 110
 Pro Glu Trp Glu Asp Asn Pro Tyr Thr Leu Gln Leu Gly Gly Cys Gly
 115 120 125
 Val His Gly Glu Tyr Ile His Leu Thr Pro Ser Tyr Ile Thr Asp Arg
 130 135 140
 Ala Asn Ser Glu Tyr Ile Trp Gly Ser Met Gly Lys Leu Leu Ile His
 145 150 155 160
 Glu Trp Ser His Leu Arg Trp Gly Leu Phe Asp Glu Tyr His Thr Asp
 165 170 175
 Asp Asp Gly Val Gln Lys Phe Tyr Ala Asp Ser Arg Gly Val Arg Ser
 180 185 190

<210> 25
 <211> 131
 <212> PRT
 <213> Strongylocentrotus purpuratus

<400> 25
 Thr Ile Leu Leu Leu Glu Ile Phe Leu Val Glu Val Val Thr Gly Gln
 1 5 10 15
 Lys Asn Thr Ile Asn Leu Asn Asn Gly Ala Tyr Ser Asn Leu Leu Ile
 20 25 30
 Ala Ile Asp Lys Asn Val Ala Glu Asp Leu Asn Ile Ile Asp Asn Ile
 35 40 45
 Lys Thr Met Phe Thr Ser Ser Ser Glu Arg Leu Tyr Leu Ala Ser Lys
 50 55 60
 Gln His Val Tyr Trp Lys His Ile Lys Ile Leu Val Pro Asn Thr Trp
 65 70 75 80
 Ser Ile Gln Ser Gly Tyr Gln Phe Ser Arg Thr Glu Thr Leu Glu Ser
 85 90 95
 Ala Asn Ile Ile Leu His Asn Phe His Asp Asp Glu Pro Phe Val Asp
 100 105 110
 Asn Leu Ala Gly Cys Gly Lys Glu Gly Thr Leu Met His Met Thr Pro
 115 120 125
 Gly Tyr Ile
 130

<210> 26
 <211> 203
 <212> PRT
 <213> *Xenopus tropicalis*

<400> 26
 Ala Ser Ser Tyr Leu Phe Gln Ala Thr Lys Lys Arg Leu Tyr Ile Arg
 1 5 10 15
 Ser Ala Lys Ile Leu Ile Pro Asn Thr Trp Ala Thr Asn Ser Ser Tyr
 20 25 30
 Gly Arg Pro Lys Leu Glu Ser Tyr Asp Lys Ala Asp Val Ile Val Ala
 35 40 45
 Pro Pro Phe Val Gln Gly Asp Asp Pro Tyr Thr Leu Gln Phe Gly Gly
 50 55 60
 Cys Gly Glu Lys Gly Lys Tyr Ile His Phe Thr Pro Asn Phe Leu Val
 65 70 75 80
 Asn Asp Glu Lys Met Leu Pro Ile Tyr Gly Pro Arg Gly Arg Val Phe
 85 90 95
 Val His Glu Trp Ala His Phe Arg Trp Gly Val Phe Asp Glu Tyr Asn
 100 105 110
 Tyr Asn Arg Pro Tyr Tyr Phe Ser Glu Asn Arg Lys Val Glu Ala Thr
 115 120 125
 Arg Cys Pro Leu Lys Leu Lys Gly Leu Asn Leu Ile Asp Val Cys Gln
 130 135 140
 Arg Gly Val Cys Asn Leu Glu Pro Cys Glu Tyr Asp Lys Asn Thr Gly
 145 150 155 160
 Leu Tyr Glu Glu Asp Cys Lys Phe Tyr Pro Asp Arg Asp Ile Leu Val
 165 170 175
 Glu Glu Ser Val Met Tyr Ala Gln Met Phe Glu Pro Val His Ala Phe
 180 185 190
 Cys Asp Ser Ser Ser His Asn Ser Glu Ala Pro
 195 200

<210> 27
 <211> 108
 <212> PRT
 <213> *Xenopus laevis*

<400> 27
 Asp Ser Leu Val Gln Leu Lys Asn Asn Gly Tyr Glu Asp Ile Ile Ile
 1 5 10 15
 Ala Val Asn Pro Glu Val Pro Glu Asp Gly Lys Ile Ile Glu Gln Ile
 20 25 30
 Lys Lys Met Leu Thr Asp Ala Ser Ser Tyr Leu Phe Gln Ala Thr Lys
 35 40 45
 Lys Arg Ile Tyr Ile Arg Ser Ala Lys Ile Leu Ile Pro Asn Ser Trp
 50 55 60
 Thr Ser Asn Ser Ser Tyr Gly Arg Pro Lys Leu Glu Ser Tyr Asp Lys
 65 70 75 80
 Ala Asp Val Ile Val Ala Ser Pro Phe Ile His Gly Asp Asp Pro Tyr
 85 90 95
 Thr Leu Pro Val Trp Arg Leu Trp Arg Lys Gly Lys
 100 105

<210> 28
 <211> 124
 <212> PRT
 <213> *Xenopus laevis*

<400> 28
 Ala Thr Arg Cys Pro Leu Lys Met Gln Gly Ser Tyr Leu Ile Glu Val
 1 5 10 15
 Cys Gln Arg Gly Ile Cys Asn Leu Glu Ala Cys Glu Tyr Asp Glu Asn
 20 25 30
 Thr Gly Leu Tyr Glu Glu Asp Cys Lys Phe Tyr Pro Lys Met Asp Ser
 35 40 45
 Asn Val Glu Glu Ser Val Met Tyr Ala Gln Met Met Glu Pro Val His
 50 55 60
 Ala Phe Cys Asn Ser Ser Ser His Asn Ser Glu Ala Pro Asn Gln Gln
 65 70 75 80
 Asn Arg Leu Cys Ser Gln Gln Ser Thr Trp Asp Val Ile Ser Lys Ser
 85 90 95
 Ser Asp Ile Gln Ser Ser Pro Pro Leu Met Asp Ser Asn Ile Pro Ala
 100 105 110
 Pro Val Val Ser Leu Leu Gln Tyr Lys Asp Arg Val
 115 120

<210> 29
 <211> 96
 <212> PRT
 <213> *Xenopus tropicalis*

<400> 29
 Asp Ser Leu Val Gln Leu Lys Asn Asn Gly Tyr Glu Asp Ile Ile Ile
 1 5 10 15
 Ala Val Asn Pro Gln Val Pro Glu Asp Gly Lys Ile Ile Glu Asn Ile
 20 25 30
 Lys Lys Met Leu Thr Asp Ala Ser Ser Tyr Leu Phe Gln Ala Thr Lys
 35 40 45
 Lys Arg Leu Tyr Ile Arg Ser Ala Lys Ile Leu Ile Pro Asn Thr Trp
 50 55 60
 Ala Thr Asn Ser Ser Tyr Gly Arg Pro Lys Leu Glu Ser Tyr Asp Lys
 65 70 75 80
 Ala Asp Val Ile Val Ala Pro Pro Phe Val Gln Arg Asp Asp Pro Tyr
 85 90 95

<210> 30
 <211> 201
 <212> PRT
 <213> *Rattus norvegicus*

<400> 30
 Gly Arg Asp Glu Pro Tyr Thr Arg Gln Phe Thr Lys Cys Gly Lys Lys
 1 5 10 15
 Ala Glu Tyr Ile His Phe Thr Pro Asp Phe Val Leu Gly Arg Lys Gln
 20 25 30
 Lys Glu Tyr Gly Asp Ser Gly Arg Leu Leu Val His Glu Trp Ala His

[illegible]

```
<210> 31
<211> 333
<212> PRT
<213> Rattus norvegicus
```

| | | | | | | | | | | | | | | | | | | | |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| <400> | 31 | | | | | | | | | | | | | | | | | | |
| Val | Lys | Ser | Ser | Lys | Val | His | Leu | Asn | Asn | Asn | Gly | Tyr | Glu | Gly | Val | | | | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | | | | | |
| Val | Ile | Ala | Ile | Asn | Pro | Ser | Val | Pro | Glu | Asp | Glu | Arg | Leu | Ile | Pro | | | | |
| | | | 20 | | | | | 25 | | | | | 30 | | | | | | |
| Ser | Leu | Lys | Ala | Lys | Cys | Leu | Gly | Arg | Ser | Gly | Val | Leu | Ser | Gly | Ala | | | | |
| | | 35 | | | | 40 | | | | | | 45 | | | | | | | |
| Glu | Asn | His | Glu | Leu | Ser | Ser | Arg | Ala | Leu | Cys | Cys | Trp | Gly | Cys | Phe | | | | |
| | 50 | | | | | 55 | | | | | 60 | | | | | | | | |
| Gly | Phe | Leu | Ala | Val | Pro | His | Asn | Ala | Ala | Tyr | Thr | Ala | Asp | His | Lys | | | | |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 | | | | |
| Gly | Asn | Gln | Ala | Asp | Val | Ile | Val | Ala | Asp | Pro | His | Leu | Lys | Tyr | Gly | | | | |
| | | | | 85 | | | | | 90 | | | | | 95 | | | | | |
| Asp | Asp | Pro | Tyr | Thr | Leu | Gln | Tyr | Gly | Gln | Cys | Gly | Asp | Arg | Gly | Gln | | | | |
| | | | 100 | | | | | 105 | | | | | 110 | | | | | | |
| Tyr | Ile | His | Phe | Thr | Pro | Asn | Phe | Leu | Leu | Ile | Asp | Asn | Leu | Ile | Ile | | | | |
| | | 115 | | | | | 120 | | | | | 125 | | | | | | | |
| Tyr | Gly | Pro | Arg | Gly | Arg | Val | Phe | Val | His | Glu | Trp | Ala | His | Leu | Arg | | | | |
| | | 130 | | | | 135 | | | | | 140 | | | | | | | | |
| Trp | Gly | Val | Phe | Asp | Glu | Tyr | Asn | Lys | Glu | Arg | Pro | Phe | Tyr | Leu | Ser | | | | |
| 145 | | | | | 150 | | | | | 155 | | | | 160 | | | | | |
| Arg | Lys | Asn | Val | Val | Glu | Ala | Thr | Arg | Cys | Ser | Thr | Asp | Ile | Thr | Gly | | | | |
| | | | | 165 | | | | | 170 | | | | | 175 | | | | | |
| Thr | Asn | Val | Val | His | Glu | Cys | Gln | Gly | Gly | Ser | Cys | Val | Thr | Arg | Lys | | | | |
| | | | 180 | | | | | 185 | | | | | 190 | | | | | | |
| Cys | Arg | Arg | Asp | Ser | Lys | Thr | Gly | Leu | Pro | Glu | Pro | Lys | Cys | Thr | Phe | | | | |
| | | 195 | | | | | 200 | | | | | 205 | | | | | | | |
| Ile | Pro | Asn | Lys | Ser | Gln | Thr | Ala | Arg | Ala | Ser | Ile | Met | Phe | Leu | Gln | | | | |

```

      210              215              220
Ser Leu Asp Ser Arg Arg Met Ile Phe Tyr Gly Gly Ile Lys Lys Cys
225              230              235              240
Val Leu Asn Lys Arg Gln Glu Met Gly Leu Asn Leu Gln Ser Tyr Lys
      245              250              255
Ala Arg Val Leu Gly Phe Ser Pro Leu Tyr Phe Gly Arg Met Val Val
      260              265              270
Glu Phe Cys Thr Glu Lys Thr His Asn Thr Glu Ala Pro Asn Leu Gln
      275              280              285
Asn Lys Ile Cys Asn Gly Arg Ser Thr Trp Asp Val Ile Lys Glu Ser
      290              295              300
Ala Asp Phe Gln His Ala Pro Pro Met Arg Gly Thr Glu Ala Pro Pro
305              310              315              320
Pro Pro Thr Phe Ser Leu Leu Lys Ser Arg Gln Arg Val
      325              330

```

```

<210> 32
<211> 335
<212> PRT
<213> Rattus norvegicus

```

```

<400> 32
Met Val Pro Val Leu Lys Val Leu Leu Phe Leu Thr Leu His Leu Leu
1              5              10              15
Gln Asp Thr Lys Ser Phe Lys Val His Leu Asn Asn Asn Gly Tyr Glu
      20              25              30
Gly Val Val Ile Ala Ile Asn Pro Ser Val Pro Glu Asp Glu Arg Leu
      35              40              45
Ile Pro Ser Leu Lys Glu Met Val Thr Gln Ala Ser Thr Tyr Leu Phe
      50              55              60
Glu Ala Ser Gln Gly Arg Phe Tyr Phe Arg Asn Val Ser Ile Leu Val
65              70              75              80
Pro Met Thr Trp Lys Ser Lys Ser Glu Tyr Leu Met Pro Lys Arg Glu
      85              90              95
Ser Tyr Asp Lys Ala Asp Val Ile Val Ala Asn Ser His Leu Lys Tyr
      100              105              110
Gly Asp Asn Pro Tyr Thr Leu Gln Tyr Gly Gln Cys Gly Asp Arg Gly
      115              120              125
Arg Tyr Ile His Phe Thr Pro Asn Phe Leu Leu Thr Asp Asn Val Arg
      130              135              140
Asn Tyr Gly Pro Arg Gly Arg Val Phe Val His Glu Trp Ala His Leu
145              150              155              160
Arg Trp Gly Val Phe Asp Glu Tyr Asn Glu Asp Arg Pro Phe Tyr Ile
      165              170              175
Ser Gly Lys Asn Thr Ile Glu Val Thr Arg Tyr Leu Cys Glu Leu Ser
      180              185              190
Asp Ser Thr Thr Ser Tyr Leu Arg Val Phe Ser Arg Pro Tyr Arg Ala
      195              200              205
Val Gln Val Thr Gly Cys Ser Thr Asp Ile Lys Gly Ser Lys Ala Val
      210              215              220
His Glu Arg Gln Arg Gly Ser Asp Val Thr Arg Leu Cys Arg Trp Asp
225              230              235              240
Ser Arg Thr Gly Leu Tyr Glu Pro Lys Cys Lys Phe Phe Pro Asp Lys
      245              250              255
Ile Gln Thr Ala Arg Ala Ser Ile Met Phe Met Gln Asn Leu Asn Ser
      260              265              270

```

Val Val Glu Phe Cys Thr Glu Lys Thr His Asn Thr Glu Ala Pro Asn
 275 280 285
 Leu Gln Asn Lys Ile Cys Asn Gly Arg Ser Thr Trp Asp Val Ile Lys
 290 295 300
 Glu Ser Ala Asp Phe Gln Gln Ala Pro Pro Met Arg Gly Thr Glu Ala
 305 310 315 320
 Pro Pro Pro Pro Thr Phe Ser Leu Leu Lys Ser Arg Gln Arg Val
 325 330 335

<210> 33
 <211> 307
 <212> PRT
 <213> Rattus norvegicus

<400> 33
 Met Gly Ser Leu Lys Ser Pro Val Phe Leu Leu Val Leu Tyr Leu Leu
 1 5 10 15
 Glu Gly Val Leu Ser Asn Ser Leu Ile Gln Leu Asn Asn Asn Gly Tyr
 20 25 30
 Glu Gly Ile Val Ile Ala Ile Asp His Asp Val Pro Glu Asp Glu Ala
 35 40 45
 Leu Ile Gln Arg Ile Lys Asp Met Val Thr Gln Ala Ser Pro Tyr Leu
 50 55 60
 Phe Glu Ala Thr Gly Lys Arg Phe Tyr Phe Lys Asn Val Ala Ile Leu
 65 70 75 80
 Ile Pro Glu Asn Trp Asn Thr Lys Pro Glu Tyr Lys Arg Pro Lys Leu
 85 90 95
 Glu Thr Leu Lys Asn Ala Asp Val Leu Val Ser Thr Met Ser Pro Ile
 100 105 110
 Gly Asn Asp Glu Pro Tyr Thr Glu His Ile Gly Ala Cys Gly Glu Arg
 115 120 125
 Gly Ile Arg Ile His Leu Thr Pro Asp Phe Leu Ala Gly Lys Lys Gln
 130 135 140
 Thr Glu Tyr Gly Pro Gln Asp Arg Thr Phe Val His Glu Trp Ala His
 145 150 155 160
 Phe Arg Trp Gly Val Phe Asp Glu Tyr Asn Asn Asn Glu Lys Phe Tyr
 165 170 175
 Leu Ser Asn Gly Lys Pro Gln Ala Val Arg Cys Ser Ala Thr Ile Thr
 180 185 190
 Gly Lys His Val Val Arg Arg Cys Gln Gly Gly Ser Cys Val Thr Asn
 195 200 205
 Gly Lys Cys Val Ile Asp Arg Val Thr Gly Leu Tyr Lys Asp Asn Cys
 210 215 220
 Val Phe Ile Pro Asp Lys Asn Gln Arg Glu Lys Ala Ser Ile Met Phe
 225 230 235 240
 Asn Gln Asn Ile Asn Ser Val Val Glu Phe Cys Thr Glu Lys Asn His
 245 250 255
 Asn Lys Glu Ala Pro Asn Ala Gln Asn Gln Arg Cys Asn Leu Arg Ser
 260 265 270
 Thr Trp Glu Val Ile Gln Glu Ser Glu Asp Phe Lys Gln Thr Thr Pro
 275 280 285
 Met Thr Ala Gln Pro Pro Ala Pro Thr Phe Ser Leu Leu Gln Thr Arg
 290 295 300
 Gln Arg Ile
 305

<210> 34
 <211> 279
 <212> PRT
 <213> Rattus norvegicus

<400> 34
 Leu Lys Leu Lys Glu Asn Gly Tyr Asp Gly Leu Leu Val Ala Ile Asn
 1 5 10 15
 Pro Arg Val Pro Glu Asp Leu Lys Leu Ile Arg Asn Ile Gln Glu Met
 20 25 30
 Ile Thr Glu Ala Ser Phe Tyr Leu Phe Asn Ala Thr Lys Arg Arg Val
 35 40 45
 Phe Phe Arg Ser Val Gln Ile Leu Ile Pro Ala Thr Trp Thr Ala His
 50 55 60
 Asn Tyr Ser Arg Val Lys Gln Glu Ser Phe Asp Lys Ala Asn Val Leu
 65 70 75 80
 Val Thr Glu Gln Asn Gly Val Pro Gly Glu Asp Pro Tyr Thr Leu Gln
 85 90 95
 His Arg Gly Cys Gly Gln Glu Gly Lys Tyr Ile His Phe Thr Pro Asn
 100 105 110
 Phe Leu Leu Asn Asp Glu Leu Ala Ala Gly Tyr Gly Ser Arg Gly Arg
 115 120 125
 Val Phe Val His Glu Trp Ala His Leu Arg Trp Gly Val Phe Asp Glu
 130 135 140
 Tyr Asn Ser Asp Lys Pro Phe Tyr Val Asn Gly Arg Asn Glu Ile Gln
 145 150 155 160
 Val Thr Arg Cys Ser Ser Asp Ile Thr Gly Val Phe Val Cys Glu Lys
 165 170 175
 Gly Leu Cys Pro His Glu Asp Cys Ile Ile Ser Lys Leu Phe Arg Glu
 180 185 190
 Gly Cys Thr Phe Leu Tyr Asn Ser Thr Gln Ser Ala Thr Gly Ser Ile
 195 200 205
 Met Phe Met Gln Ser Leu Pro Ser Val Val Glu Phe Cys Asn Glu Gly
 210 215 220
 Thr His Asn Arg Glu Ala Pro Asn Leu Gln Asn Arg Val Cys Ser Leu
 225 230 235 240
 Arg Ser Thr Trp Asp Val Ile Thr Gly Ser Ser Asp Leu Asn His Ser
 245 250 255
 Leu Pro Val Leu Gly Val Glu Leu Pro Ala Pro Pro Ser Phe Ser Leu
 260 265 270
 Leu Gln Ala Gly Asp Arg Val
 275

<210> 35
 <211> 246
 <212> PRT
 <213> Rattus norvegicus

<400> 35
 Met Gly Phe Ser Arg Gly Ile Val Phe Leu Leu Leu Leu Tyr Leu Leu
 1 5 10 15
 Gln Gly Ser Asp Thr Ser Leu Val Lys Leu Asn Glu Asn Gly Tyr Glu
 20 25 30
 Asp Ile Ile Ile Ala Ile Asp Pro Ala Val Ser Glu Asp Val Thr Ile
 35 40 45

```

Ile Asp Gln Ile Lys Asp Met Val Thr Lys Ala Ser Ala Tyr Leu Phe
  50                      55                      60
Glu Ala Thr Glu Lys Arg Phe Phe Phe Lys Asn Val Ser Ile Leu Ile
  65                      70                      75                      80
Pro Glu Asn Trp Thr Asn Ser Asp Gln Tyr Arg Arg Pro Lys Gln Glu
                      85                      90                      95
Ser Tyr Lys His Ala Asp Ile Lys Val Ala Pro Pro Ala Leu Gln Gly
                      100                      105                      110
Arg Asp Glu Pro Tyr Thr Arg Gln Phe Thr Lys Cys Gly Lys Lys Ala
                      115                      120                      125
Glu Tyr Ile His Phe Thr Pro Asp Phe Val Leu Gly Arg Lys Gln Lys
                      130                      135                      140
Glu Tyr Gly Asp Ser Gly Arg Leu Leu Val His Glu Trp Ala His Leu
  145                      150                      155                      160
Arg Trp Gly Val Phe Asp Glu Tyr Asn Glu Asp Gln Pro Phe Tyr Ser
                      165                      170                      175
Ala Ser Ser Lys Lys Ile Glu Ala Thr Arg Cys Ser Thr Gly Ile Lys
                      180                      185                      190
Gly Met Asn Lys Ala Gln Val Cys Gln Gly Gly Ser Cys Ile Thr Arg
                      195                      200                      205
Asn Cys Arg Arg Asn Ser Thr Thr Gln Leu Tyr Glu Lys Asp Cys Gln
                      210                      215                      220
Phe Phe Pro Asp Lys Val Gln Thr Glu Lys Ser Ser Ile Met Phe Met
  225                      230                      235                      240
Gln Ser Ile Asp Ser Val
                      245

```

```

<210> 36
<211> 308
<212> PRT
<213> Rattus norvegicus

```

```

<400> 36
Met Val Pro Val Leu Lys Val Leu Leu Phe Leu Thr Leu His Leu Leu
  1                      5                      10                      15
Gln Asp Thr Lys Ser Phe Lys Val His Leu Asn Asn Asn Gly Tyr Glu
                      20                      25                      30
Gly Val Val Ile Ala Ile Asn Pro Ser Val Pro Glu Asp Glu Arg Leu
                      35                      40                      45
Ile Pro Ser Leu Lys Glu Met Val Thr Gln Ala Ser Thr Tyr Leu Phe
  50                      55                      60
Glu Ala Ser Gln Gly Arg Phe Tyr Phe Arg Asn Val Ser Ile Leu Val
  65                      70                      75                      80
Pro Met Thr Trp Lys Ser Lys Ser Glu Tyr Leu Met Pro Lys Arg Glu
                      85                      90                      95
Ser Tyr Asp Lys Ala Asp Val Ile Val Ala Asn Ser His Leu Lys Tyr
                      100                      105                      110
Gly Asp Asn Pro Tyr Thr Leu Gln Tyr Gly Gln Cys Gly Asp Arg Gly
                      115                      120                      125
Arg Tyr Ile His Phe Thr Pro Asn Phe Leu Leu Thr Asp Asn Val Arg
                      130                      135                      140
Asn Tyr Gly Pro Arg Gly Arg Val Phe Val His Glu Trp Ala His Leu
  145                      150                      155                      160
Arg Trp Gly Val Phe Asp Glu Tyr Asn Glu Asp Arg Pro Phe Tyr Ile
                      165                      170                      175
Ser Gly Lys Asn Thr Ile Glu Val Thr Arg Cys Ser Thr Asp Ile Lys

```

```

      180      185      190
Gly Ser Lys Ala Val His Glu Arg Gln Arg Gly Ser Asp Val Thr Arg
      195      200      205
Leu Cys Arg Trp Asp Ser Arg Thr Gly Leu Tyr Glu Pro Lys Cys Lys
      210      215      220
Phe Phe Pro Asp Lys Ile Gln Thr Ala Arg Ala Ser Ile Met Phe Met
225      230      235      240
Gln Asn Leu Asn Ser Val Val Glu Phe Cys Thr Glu Lys Thr His Asn
      245      250      255
Thr Glu Ala Pro Asn Leu Gln Asn Lys Ile Cys Asn Gly Arg Ser Thr
      260      265      270
Trp Asp Val Ile Lys Glu Ser Ala Asp Phe Gln Gln Ala Pro Pro Met
      275      280      285
Arg Gly Thr Glu Ala Pro Pro Pro Thr Phe Ser Leu Leu Lys Ser
      290      295      300
Arg Gln Arg Val
305

```

```

<210> 37
<211> 162
<212> PRT
<213> Homo sapiens

```

```

<400> 37
Asp Pro Asn Val Pro Glu Asp Glu Thr Leu Ile Gln Gln Ile Lys Asp
1      5      10      15
Met Val Thr Gln Ala Ser Leu Tyr Leu Phe Glu Ala Thr Gly Lys Arg
      20      25      30
Phe Tyr Phe Lys Asn Val Ala Ile Leu Ile Pro Glu Thr Trp Lys Thr
      35      40      45
Lys Ala Asp Tyr Val Arg Pro Lys Leu Glu Thr Tyr Lys Asn Ala Asp
      50      55      60
Val Leu Val Ala Glu Ser Thr Pro Pro Gly Asn Asp Glu Pro Tyr Thr
      65      70      75      80
Glu Gln Met Gly Asn Cys Gly Glu Lys Gly Glu Arg Ile His Leu Thr
      85      90      95
Pro Asp Phe Ile Ala Gly Lys Lys Leu Ala Glu Tyr Gly Pro Gln Gly
      100      105      110
Lys Ala Phe Val His Glu Trp Ala His Leu Arg Trp Gly Val Phe Asp
      115      120      125
Glu Tyr Asn Asn Asp Glu Lys Phe Tyr Leu Ser Asn Gly Arg Ile Gln
      130      135      140
Ala Val Arg Cys Ser Ala Gly Ile Thr Gly Thr Asn Val Val Lys Lys
      145      150      155      160
Cys Gln

```

```

<210> 38
<211> 31
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> synthetically generated oligonucleotide

```

<400> 38
atgtcgacca tatgattcaa caaataaagg a 31

<210> 39
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetically generated oligonucleotide

<400> 39
atgcgccgc tcacttcttt actacatttg tac 33

<210> 40
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetically generated oligonucleotide

<400> 40
catatgtcac tcattcagct gaacaac 27

<210> 41
<211> 25
<212> DNA
<213> Artificial Sequence
<220>
<223> synthetically generated oligonucleotide

<400> 41
catatggaag atgaaacact cattc 25

<210> 42
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetically generated oligonucleotide

<400> 42
gcggccgctc acttctttac tacatttgta cc 32

<210> 43
<211> 30
<212> DNA
<213> Artificial Sequence

<220>

<223> synthetically generated oligonucleotide

<400> 43

gcggccgctc acttgtttgg agcttctttg

30

<210> 44

<211> 6

<212> PRT

<213> Artifical Sequence

<220>

<223> synthetically generated oligonucleotide

<220>

<221> MISC_FEATURE

<222> 1

<223> (7-methoxy-coumarin-4-yl)acetyl or Mca

<220>

<221> MISC_FEATURE

<222> 6

<223> (2,4-dinitrophenyl)-L-2,3-diaminopropionyl or Dpa

<400> 44

Xaa Lys Ala Met His Xaa

1

5